WHAT IS CLAIMED IS:

1. A semiconductor device including a gate portion comprising a semiconductor film disposed at a predetermined region on the surface of a semiconductor substrate, and

source and drain regions comprising an impurity introduced layer formed by introducing impurities selectively to the inside of the semiconductor substrate, wherein

the gate portion and a region just below the gate portion are not melted by the irradiation of a laser light and the impurity introduced layer comprises a melted and re-solidified layer.

2. A semiconductor device according to claim 1, wherein the semiconductor substrate is mounted on an insulation film.

3. A semiconductor device according to claim 1, wherein an insulated gate field effect transistor and a bipolar transistor are formed on one identical semiconductor substrate.

4. A semiconductor device according to claim 1, wherein at least one kind of a semiconductor film, a SILICON silicide film or a metal film is present between the source and drain regions and electrodes for electrically connecting the regions.

5. A semiconductor device including a gate portion comprising a semiconductor film disposed at a predetermined region on the surface of a semiconductor substrate, and

source and drain regions comprising an impurity introduced layer formed by introducing impurities selectively to the inside of the semiconductor substrate by using the

semiconductor film as a mask, wherein

the impurity introduced layer comprises an impurity layer having a box shaped highly doped impurity distribution on at least one cross section perpendicular to the main surface of the semiconductor substrate.

6. A semiconductor device according to claim 5, wherein the semiconductor substrate is mounted on an insulation film.

7. A semiconductor device according to claim 5, wherein an insulated gate field effect transistor and a bipolar transistor are formed on one identical semiconductor substrate.

8. A semiconductor device according to claim 5, wherein at least one kind of a semiconductor film, a SILICON silicide film or a metal film is present between the source and drain regions and electrodes for electrically connecting the regions.

9. A semiconductor device including:

a first region having a first conduction type formed in a semiconductor substrate;

a second region having a second conduction type disposed adjacent with the first region;

a gate portion comprising a semiconductor film disposed to a predetermined region on the first region;

source and drain regions comprising a first impurity introduced layer formed by introducing impurities having a second conduction type selectively to the first region by using the semiconductor film as a mask;

a gate portion comprising a semiconductor film disposed to a predetermined region on the second region; and

source and drain regions comprising a second impurity introduced layer formed by introducing impurities having a first conduction type selectively to the second region by using the semiconductor film as a mask, wherein

the first and the second impurity introduced layers each comprises an impurity layer having a box shaped highly doped impurity distribution on at least one cross section perpendicular to the main surface of the semiconductor substrate.

10. A semiconductor device according to claim 9, wherein the semiconductor substrate is mounted on an insulation film.

11. A semiconductor device according to claim 9, wherein an insulated gate field effect transistor and a bipolar transistor are formed on one identical semiconductor substrate.

12. A semiconductor device according to claim 9, wherein at least one kind of a semiconductor film, a SILICON silicide film or a metal film is present between the source and drain regions and electrodes for electrically connecting the regions.

13. A method of manufacturing a semiconductor device comprising the steps of:

disposing a semiconductor film to a predetermined region on the surface of a semiconductor substrate;

forming an impurity introduced layer by introducing

impurities selectively to the inside of the semiconductor substrate by using the semiconductor film as a mask;

disposing a laser energy absorbing film for absorbing the energy of a laser light having a predetermined wavelength on the impurity introduced layer adjacent with the semiconductor film; and

irradiating the laser light thereby melting and re-solidifying the impurity introduced layer.

14. A method of manufacturing a semiconductor device according to claim 13, wherein the semiconductor substrate is formed on an insulation film.

15. A method of manufacturing a semiconductor device according to claim 13, wherein the laser light has such a wavelength that the depth at which the relative light intensity of the laser light after transmitting the semiconductor film decays to e^{-2} at the inside of the semiconductor substrate is larger than the depth of the impurity introduced layer.

16. A method of manufacturing a semiconductor device according to claim 13, wherein the heat treatment temperature for the film forming steps disposed between the step of forming the impurity introduced layer and the step of irradiating the laser light is set to such a level that the region of the impurity introduced layer that is rendered amorphous is not re-crystallized.

17. A method of manufacturing a semiconductor device

according to claim 13, wherein the laser energy absorbing film is a metal layered film.

18. A method of manufacturing a semiconductor device comprising the steps of:

disposing a semiconductor film to a predetermined region on the surface of the semiconductor substrate;

forming an impurity introduced layer by introducing impurities selectively to the inside of the semiconductor substrate by using the semiconductor film as a mask;

disposing a laser energy absorbing film for absorbing the energy of a laser light having a predetermined wavelength on the impurity introduced layer adjacent with the semiconductor film;

disposing an anti-reflective film by way of an anti-reactive film deposited over the semiconductor film and the laser energy absorbing film; and

irradiating the laser light to the anti-reflective film thereby melting and re-solidifying the impurity introduced layer.

19. A method of manufacturing a semiconductor device according to claim 18, wherein the semiconductor substrate is formed on an insulation film.

20. A method of manufacturing a semiconductor device according to claim 18, wherein the laser light has such a wavelength that the depth at which the relative light intensity

of the laser light after transmitting the semiconductor film decays to e^{-2} at the inside of the semiconductor substrate is larger than the depth of the impurity introduced layer.

21. A method for manufacturing a semiconductor device according to claim 18, wherein the heat treatment temperature for the film forming steps disposed between the step of forming the impurity introduced layer and the step of irradiating the laser light is set to such a level that the region of the impurity introduced layer that is rendered amorphous is not re-crystallized.

22. A method for manufacturing a semiconductor device according to claim 18, wherein the laser energy absorbing film is a metal layered film.

23. A method for manufacturing a semiconductor device according to claim 18, wherein the anti-reflective film is formed on the laser energy absorbing film which is polished to the thickness of the semiconductor film and planarized.

24. A method for manufacturing a semiconductor device according to claim 18, wherein the anti-reflective film is a polycrystalline film.

25. A method for manufacturing a semiconductor device according to claim 18, wherein the thickness of the anti-reflective film is set such that the energy absorptivity of the laser light in the laser energy absorbing film is maximized.

26. A method for manufacturing a semiconductor device according to claim 18, wherein the vertical film thickness of the anti-reflective film over the source diffusion layer is set to a thickness larger by $\lambda/(2n)$ than the minimum film thickness that maximizes the energy absorptivity of the irradiated laser light in the laser energy absorption film, where λ represents the wavelength of the irradiated laser light and n represents the refractive index of the anti-reflective film.

27. A method for manufacturing a semiconductor device comprising the steps of:

forming a gate portion by layering a gate electrode and a gate protection film by way of a gate insulation film disposed on a semiconductor substrate;

introducing impurities having a first conduction type selectively into the semiconductor substrate by using the gate portion as a mask, thereby forming a first impurity diffusion layer having a shallower junction;

leaving the insulation film selectively on the side wall of the gate portion thereby forming a gate side wall insulation film;

introducing impurities having a first conduction type so as to overlap a portion of the first impurity diffusion layer by using the gate portion and the gate side wall insulation film as an introduction mask thereby forming a second impurity

diffusion layer having a deeper junction;

depositing a first insulation film comprising a material containing Al or a metal containing Al and a silicon nitride film for the entire surface on the semiconductor substrate;

depositing a second insulation film having a film thickness larger than that of the gate portion;

planarizing the surface of the second insulation film till the gate protection film is exposed;

removing the second insulation film deposited on the gate portion including the gate side wall insulation film and on the second impurity diffusion layer thereby exposing the first insulation film;

removing the first insulation film and forming an opening so as to expose a portion of the surface of the second impurity diffusion layer;

selectively disposing a laser energy absorbing film for absorbing the energy of the laser light having a predetermined wavelength on the opening;

covering a laser light anti-reflective film on the laser energy absorbing film; and

irradiating a laser light on the laser light anti-reflective film thereby melting and re-solidifying the first and the second impurity diffusion layers.

28. A method of manufacturing a semiconductor device according to claim 27, wherein the semiconductor substrate is

formed on an insulation film.

29. A method of manufacturing a semiconductor device according to claim 27, wherein the heat treatment temperature for the film preparation step disposed from the step of forming the first impurity diffusion layer to the re-solidifying step is set to such a level that at least a portion of the amorphous layer of the first and the second impurity diffusion layers is not crystallized.

30. A method of manufacturing a semiconductor device according to claim 27, wherein the heat treatment temperature for the film preparation step disposed between the step of forming the first impurity diffusion layer and the re-solidifying step is such a temperature that does not exceeds 400°C.

31. A method of manufacturing a semiconductor device according to claim 27, wherein the laser energy absorbing film is a metal layered film.

32. A method of manufacturing a semiconductor device according to claim 27, wherein the laser light is an irradiation light from a solid laser having a wavelength of 1064 nm.

33. A method of manufacturing a semiconductor device according to claim 27, wherein the anti-reflective film is an Si film, a Ge film or a mixed Si and Ge film.

34. A method for manufacturing a semiconductor device according to claim 27, wherein the vertical film thickness of

the anti-reflective film over the source diffusion layer is set to a thickness larger by $\lambda/(2n)$ than the minimum film thickness that maximizes the energy absorptivity of the irradiated laser light in the laser energy absorption film, where λ represents the wavelength of the irradiated laser light and n represents the refractive index of the anti-reflective film.

35. A method for manufacturing a semiconductor device according to claim 27, wherein

a bipolar transistor is hybridized in a semiconductor substrate, and wherein

the opening formed so as to expose the surface of the first and the second impurity diffusion layers is also disposed to an emitter extension electrode region of the bipolar transistor, and

the laser energy absorbing film is left selectively to the openings of the first and the second impurity diffusion layers and the emitter extension electrode region of the bipolar transistor, whereby

the first and the second impurity diffusion layers and the emitter extension electrode region are collectively put to the activating heat treatment by the irradiation of the laser light.

36. A method for manufacturing a semiconductor device according to claim 27, wherein the activating heat treatment

of the first and the second impurity diffusion layers is applied by the irradiation of the laser light in the openings where the laser energy absorbing film is selectively left and the activating heat treatment is not applied in the region including the gate electrode where the laser energy absorbing film is not left.

37. A method for manufacturing a semiconductor device according to claim 27, wherein

a bipolar transistor and an IGFET are hybridized on a semiconductor substrate, and wherein the method includes the step of

adding impurities at high concentration to a gate electrode formed in a region intended to form the IGFET and to an emitter extension electrode formed in a region intended to form the bipolar transistor, and conducting activation by applying a high temperature short time heat treatment to the gate electrode and the emitter extension electrode, and includes, in the region intended to form the IGFET, the steps of:

forming first and second impurity diffusion layers to the semiconductor substrate by using the gate electrode as an ion implantation mask;

depositing a protection film so as to cover the region including the gate electrode and the emitter extension electrode;

removing the protection film selectively to form an

opening so as to expose the surface of the first and the second impurity diffusion layers;

leaving the laser energy absorbing film selectively in the opening; and

applying an activating heat treatment to the first and the second impurity diffusion layers by the irradiation of a laser light.

38. A method for manufacturing a semiconductor device including the steps of:

forming a gate portion by layering a gate electrode and a gate protection film by way of a gate insulation film disposed on a semiconductor substrate;

introducing impurities having a first conduction type selectively into the semiconductor substrate by using the gate portion as a mask, thereby forming a first impurity diffusion layer having a shallower junction;

leaving the insulation film selectively on the side of the gate portion thereby forming a gate side wall insulation film;

depositing a first insulation film comprising a material containing Al or a material containing Al and a silicon nitride film for the entire surface on the semiconductor substrate;

depositing a second insulation film having a film thickness larger than that of the gate portion;

planarizing the surface of the second insulation film

till the gate protection film is exposed;

removing the second insulation film deposited on the gate portion including the gate side wall insulation film and on the impurity diffusion layer thereby exposing the first insulation film;

removing the first insulation film and forming an opening so as to expose a portion of the surface of the first impurity diffusion layer;

selectively disposing a laser energy absorbing film for absorbing the energy of the laser light having a predetermined wavelength on the opening;

covering a laser light anti-reflective film on the laser energy absorbing film;

irradiating a laser light on the laser light anti-reflective film thereby melting and re-solidifying the first impurity diffusion layer;

removing the laser energy absorbing film and the laser light anti-reflective film selectively thereby forming an opening so as to expose the surface of the first impurity diffusion layer and leaving the silicon film selectively in the opening; and

siliciding a portion of the silicon film.

39. A method of manufacturing a semiconductor device according to claim 38, wherein the semiconductor substrate is formed on an insulation film.

40. A method of manufacturing a semiconductor device according to claim 38, wherein the heat treatment temperature for the film preparation step disposed between the step of forming the first impurity diffusion layer and the re-solidifying step is such a temperature that does not exceeds 400°C.

41. A method of manufacturing a semiconductor device according to claim 38, wherein the laser energy absorbing film is a metal layered film.

42. A method of manufacturing a semiconductor device according to claim 38, wherein the laser light is an irradiation light from a solid laser having a wavelength of 1064 nm.

43. A method of manufacturing a semiconductor device according to claim 38, wherein the anti-reflective film is an Si film, a Ge film or a mixed Si and Ge film.

44. A method for manufacturing a semiconductor device according to claim 38, wherein the vertical film thickness of the anti-reflective film over the source diffusion layer is set to a thickness larger by $\lambda/(2n)$ than the minimum film thickness that maximizes the energy absorptivity of the irradiated laser light in the laser energy absorption film where λ represents the wavelength of the irradiated laser light and n represents the refractive index of the anti-reflective film.

45. A method for manufacturing a semiconductor device according to claim 38, wherein the method includes, in a case

where a plurality of impurity diffusion regions to be activated by the irradiation of the laser light are present and the regions for the impurity diffusion regions on the surface of the semiconductor substrate are different, a step of

irradiating laser light at least for once under the irradiation conditions corresponding to the regions to the plurality of impurity diffusion regions.

46. A method for manufacturing a semiconductor device according to claim 38, wherein the silicon film is formed by any of methods of a collimator sputtering method, a remote sputtering method, a catalytical chemical vapor phase reaction method or an ionizing vapor deposition method.

47. A method for manufacturing a semiconductor device according to claim 38, wherein the silicon film is deposited selectively on the surface of the semiconductor substrate in which the opening is exposed.

48. A method for manufacturing a semiconductor device comprising the steps of:

forming a gate portion by layering a gate electrode and a gate protection film by way of a gate insulation film disposed on a semiconductor substrate;

introducing impurities having a first conduction type selectively into the semiconductor substrate by using the gate portion as a mask, thereby forming a first impurity diffusion layer having a shallower junction;

leaving the insulation film selectively on the side wall of the gate portion thereby forming a gate side wall insulation film;

introducing impurities having a first conduction type so as to overlap a portion of the first impurity diffusion layer by using the gate portion and the gate side wall insulation film as an introduction mask thereby forming a second impurity diffusion layer having a deeper junction;

depositing a first insulation film comprising a material containing Al or a material containing Al and a silicon nitride film for the entire surface on the semiconductor substrate;

depositing a second insulation film having a film thickness larger than that of the gate portion;

planarizing the surface of the second insulation film till the gate protection film is exposed;

removing the second insulation film deposited on the gate portion including the gate side wall insulation film and on the second impurity diffusion layer thereby exposing the first insulation film; and

removing the first insulation film and forming an opening so as to expose a portion of the surface of the second impurity diffusion layer.